
M E M O R A N D U M

TO: MSDS Requester
FROM: Sue Stewart - 3E Company Data Management
RE: The MSDS you have requested
Manufacturer: ROOTO CORPORATION
Product: TOLIET BOWL DE-LIMER / CLEANER

Per the Manufacturer the following MSDS(s) covers the product listed above.

MATERIAL SAFETY DATA SHEET

MANUFACTURER'S NAME/ADDRESS:

JONES-HAMILTON CO.
8400 ENTERPRISE DRIVE
NEWARK, CA 94560
OR
30354 TRACY ROAD
WALBRIDGE, OH 43465

EMERGENCY PHONE NUMBERS:

(510) 797-2471 ()
(510) 792-4500

OR

(419) 666-9838
(419) 666-6337

CHEMTREC: (800)424

SECTION I - PRODUCT IDENTIFICATION

PRODUCT NAME: HYDROCHLORIC ACID

CAS NUMBER: 7647-01-0

NIOSH REGISTRY NO.: MW 4025000

GENERAL OR GENERIC ID: INORGANIC ACID, MURIATIC ACID

HAZARD CLASSIFICATION (D.O.T.): CORROSIVE MATERIAL (173.240)

OSHA HAZARD COMMUNICATIONS HEALTH HAZARD CLASSIFICATION: CORROSIVE

HAZARDOUS MATERIALS IDENTIFICATION SYSTEM (HMIS) RATING: 3-0-0

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) RATING: 3-0-0-X

SARA TITLE III HAZARD CATEGORY: ACUTE

THIS PRODUCT IS A TOXIC CHEMICAL SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF TITLE III OF THE SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 AND 40 CFR PART 372.

SECTION II - HAZARDOUS COMPONENTS

<u>INGREDIENT</u>	<u>PERCENT (BY WEIGHT)</u>	<u>PEL</u>	<u>TLV</u>
HYDROGEN CHLORIDE	32-37	5ppm- CEILING	5ppm- CEILING

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SECTION III - PHYSICAL DATA

<u>PROPERTY</u>	<u>REFINEMENT</u>	<u>VALUE</u>
INITIAL BOILING POINT		123° F - 183° F @ 760mm Hg
VAPOR PRESSURE		30mm Hg @ 25° C (as HCl)
VAPOR DENSITY	AIR = 1	1.3
SPECIFIC GRAVITY		1.16 - 1.19 @ 68° F
PERCENT VOLATILES		100%
EVAPORATION RATE	BUTYL ACETATE = 1	>1
COLORLESS TO YELLOW ACRID, PUNGENT LIQUID		

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT: NOT APPLICABLE (WILL NOT BURN)

EXPLOSIVE LIMITS: UPPER: NOT APPLICABLE LOWER: NOT APPLICABLE

EXTINGUISHING MEDIA: WATER FOG, CO₂, DRY CHEMICAL, OR AS APPROPRIATE FOR COMBUSTIBLES IN AREA.

HAZARDOUS THERMAL DECOMPOSITION PRODUCTS: MAY FORM TOXIC MATERIALS: HYDROGEN CHLORIDE, ACID VAPORS.

UNUSUAL FIRE AND EXPLOSION HAZARDS: REACTS WITH MOST METALS TO PRODUCE POTENTIALLY EXPLOSIVE HYDROGEN GAS. EXPLOSIVE CONCENTRATIONS OF HYDROGEN MAY ACCUMULATE INSIDE METAL EQUIPMENT.

SPECIAL FIREFIGHTING PROCEDURES: USE WATER SPRAY TO COOL CONTAINERS AND CONTROL VAPORS. RUN-OFF FROM FIRE CONTROL MAY CAUSE POLLUTION. WEAR SELF-CONTAINED BREATHING APPARATUS WITH A FULL FACE-PIECE OPERATED IN PRESSURE-DEMAND OR OTHER POSITIVE PRESSURE MODE AND FULL BODY PROTECTION CLOTHING WHEN FIGHTING FIRES.

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SECTION V - HEALTH HAZARD DATA

PRINCIPAL HEALTH HAZARDS: INCLUDING SIGNIFICANT ROUTES, EFFECTS, SYMPTOMS OF OVEREXPOSURE, AND MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE.

EYE: RAPIDLY CAUSES SEVERE BURNS, POSSIBLY WITH PERMANENT IMPAIRMENT OF VISION.

SKIN CONTACT: RAPIDLY CAUSES SEVERE BURNS.

SKIN ABSORPTION: NOT LIKELY TO BE ABSORBED IN TOXIC AMOUNTS.

INGESTION: THE GREATEST HAZARD IS THE CORROSIVE ACTION.

INHALATION: EXPOSURE LIMITS: OSHA 8 HOUR "TWA" AND ACGIH "TLV" = 5 ppm ($7\text{mg}/\text{m}^3$). THESE ARE ALSO CEILING LIMITS.

CARCINOGENICITY: NOT LISTED AS A CARCINOGEN BY IARC, NTP, OSHA, OR ACGIH.

FIRST AID:

IF INHALED: IMMEDIATELY REMOVE TO FRESH AIR. CALL A PHYSICIAN. IF BREATHING IS DIFFICULT, GIVE OXYGEN. IF BREATHING HAS STOPPED, GIVE ARTIFICIAL RESPIRATION.

IF SWALLOWED: DO NOT INDUCE VOMITING. GIVE LARGE QUANTITIES OF WATER. CALL A PHYSICIAN IMMEDIATELY. KEEP WARM.

IF EYES CONTACTED: IMMEDIATELY FLUSH WITH CLEAN WATER, HOLDING EYELIDS OPEN FOR 15 MINUTES. CALL A PHYSICIAN. DO NOT USE CHEMICAL ANTIDOTES. SPEED IS ESSENTIAL.

IF ON SKIN: IMMEDIATELY FLUSH EXPOSED AREA WITH WATER FOR 15 MINUTES. REMOVE CONTAMINATED CLOTHING (DO NOT REUSE UNTIL LAUNDERED). GET MEDICAL EVALUATION.

NOTES TO PHYSICIAN:

INHALATION: CAN COMPLETELY DESTROY MUCOUS MEMBRANES. CAN CAUSE CHOKING, COUGHING, HEADACHE, DIZZINESS. PULMONARY EDEMA MAY FOLLOW AFTER SEVERAL HOURS. $\text{LC}_{50}(\text{RAT})$: 3124 ppm/1 HOUR @ 100% HCl.

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INGESTION: SEVERE BURNING OF MOUTH, PHARYNX, ABDOMEN; CORROSION OF UPPER GASTRO-INTESTINAL TRACT, FOLLOWED BY VOMITING. DENTAL ERROSIONS. WEAKNESS FROM FALLING BLOOD PRESSURE. ASPHYXIA MAY OCCUR FROM EDEMA OF THE GLOTTIS. LD₅₀(RABBIT): 900 mg/Kg @ 100% HCl.

EYES: LIQUID: CONJUNCTIVAL EDEMA AND CORNEAL DESTRUCTION THAT MAY CAUSE BLINDNESS. PAIN, TEARING, AND PHOTOPHOBIA. VAPOR: EYE IRRITANT. MAY CAUSE PERMANENT EYESIGHT DAMAGE.

SKIN: SEVERE PAIN WITH BURNS AND POSSIBLE ULCERATION. USUALLY PENETRATES THE FULL THICKNESS OF THE SKIN. SIGNIFICANT SKIN PERMEATION AND SYSTEMIC TOXICITY AFTER CONTACT APPEARS UNLIKELY.

SECTION VI - REACTIVITY DATA

STABILITY: STABLE

INCOMPATIBILITY: (MATERIALS TO AVOID): MOST METALS, ALKALIS, METALLIC OXIDES, AMINES, AND STRONG OXIDIZERS.

REACTS WITH METALS TO GIVE HYDROGEN GAS.

REACTS WITH OXIDIZERS TO GIVE CHLORINE GAS.

REACTS WITH CYANIDES TO GIVE HYDROGEN CYANIDE GAS.

REACTS WITH SULFIDES TO GIVE HYDROGEN SULFIDE GAS.

REACTS WITH FORMALDEHYDE TO GIVE BISCHLOROMETHYL ETHER (AN OSHA REGULATED CARCINOGEN).

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

SECTION VII - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

REPORTABLE QUANTITY (RQ): 5,000 Lb/2,237 Kg Approx. 1,300 gallons

SMALL SPILL: COVER THE CONTAMINATED SURFACE WITH SODIUM BICARBONATE, SODA ASH OR LIME. MIX AND ADD WATER IF NECESSARY TO FORM A SLURRY. SCOOP UP SLURRY AND WASH SITE WITH SODA ASH SOLUTION.

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LARGE SPILL: EVACUATE PERSONS FROM AREA THAT ARE NOT EQUIPPED WITH PROPER PROTECTIVE EQUIPMENT (SEE SECTION VIII). STAY UPWIND OF ANY SPILL. STOP LEAK AT SOURCE. DIKE TO PREVENT SPREADING. PUMP TO SALVAGE TRUCK/TANK.

WASTE DISPOSAL METHOD: COMPLY WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.

NOTE: AQUATIC TOXICITY: HYDROCHLORIC ACID IS SLIGHTLY TOXIC (96 HOUR LC₅₀ = 50 - 500 mg/liter). THE 96 HOUR LC₅₀ IN MOSQUITO FISH IS 282 mg/liter.

SECTION VIII - PROTECTIVE EQUIPMENT TO BE USED

VENTILATION: IF POSSIBLE PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW EXPOSURE LIMITS.

RESPIRATORY PROTECTION: WHERE REQUIRED TO MAINTAIN EXPOSURE LEVELS BELOW EXPOSURE LIMITS USE A NIOSH APPROVED RESPIRATOR FOR HYDROGEN CHLORIDE GAS, OR HYDROGEN CHLORIDE MISTS AS APPLICABLE. FOR GAS UP TO 50 ppm, USE SUPPLIED AIR, FULL FACE-PIECE RESPIRATOR OR SELF-CONTAINED BREATHING APPARATUS.

PROTECTION GLOVES: WEAR ACID RESISTANT GLOVES, SUCH AS: NEOPRENE, POLYVINYL CHLORIDE.

EYE PROTECTION: CHEMICAL SPLASH GOGGLES AS A MINIMUM. FACE SHIELD USE IS ALSO ADVISABLE.

OTHER PROTECTIVE EQUIPMENT: RUBBER OR PLASTIC COATED APRONS, COATS, SHOES, HARD HAT WITH BRIM. LONG SLEEVE WOOL, POLYESTER, OR ACRYLIC CLOTHING AS A MINIMUM. IN CASE OF EMERGENCY, OR WHERE THERE IS A POSSIBILITY OF CONSIDERABLE EXPOSURE, WEAR COMPLETE ACID SUIT WITH HOOD AND FORCED AIR OR SELF-CONTAINED BREATHING APPARATUS.

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SECTION IX - SPECIAL PRECAUTIONS

DO NOT GET IN EYES, ON SKIN OR CLOTHING.

AVOID BREATHING VAPORS.

WASH THOROUGHLY WITH SOAP AND WATER AFTER HANDLING.

WEAR ALL RECOMMENDED PROTECTIVE EQUIPMENT WHEN HANDLING.

KEEP CONTAINERS TIGHTLY CLOSED. KEEP AWAY FROM HEAT, SPARKS AND FLAME.

KEEP IN COOL PLACE. DO NOT STORE OR MIX WITH CYANIDES, SULFIDES OR FORMALDEHYDE. PROTECT CONTAINERS FROM MECHANICAL DAMAGE.

THE DATA IN THIS MATERIAL SAFETY DATA SHEET RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN AND DOES NOT RELATE TO USE IN COMBINATION WITH ANY OTHER MATERIAL IN ANY PROCESS. THE INFORMATION SET FORTH HEREIN IS FURNISHED FREE OF CHARGE AND IS BASED ON TECHNICAL DATA THAT JONES-HAMILTON BELIEVES TO BE RELIABLE. IT IS INTENDED FOR USE BY PERSONS HAVING TECHNICAL SKILL AND AT THEIR OWN DISCRETION AND RISK. SINCE CONDITIONS OF USE ARE OUTSIDE OUR CONTROL, WE MAKE NO WARRANTIES, EXPRESS OR IMPLIED, AND ASSUME NO LIABILITY IN CONNECTION WITH ANY USE OF THIS INFORMATION. NOTHING HEREIN IS TO BE TAKEN AS A LICENSE TO OPERATE UNDER OR A RECOMMENDATION TO INFRINGE ANY PATENTS.

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November 8, 1990

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